NEWS IN BRIEF

Sperry Rand joint venture?

FOLLOWING the successes of Saab-Univac in Scandinavia and Nippon Univac in Japan, Sperry Rand Corp is considering a similar venture proposal by a "large company" in another country, chairman and chief executive J. Paul Lyet has revealed.

Univac wanted Siemens for several years, but a spokesman in Munich declared that Siemens was no longer interested in joint ventures of the kind Univac wanted.

Two other prime candidates are Olivetti in Italy and Philips in Holland.

Northern HQ

AN office to house the sales, software and engineering staff that supplies its customers in the North of England and Scotland has been opened by Perkin-Elmer Data Systems at Altrincham, Cheshire. The office is the company's Northern region headquarters.

Engineers' access

CHEMICAL engineers interested in the Institution of Chemical Engineers' Physical Property Data Service, PPDS, can now access it via the Nottingham-based firm, Gemma Associates, which is running PPDS on its Digital Equipment PDP-11/70 minicomputer. PPDS includes a databank of 17 constant and 15 variable properties of more than 400 compounds.

First in NW

THE first IBM System 34 to be delivered in North West England has gone to newly-formed subsidiary of G. H. Brownbill Ltd, the Warrington-based software house.

Winning views of life in year 2000

MANY views of the world and society in the year 2000 were presented by readers who entered the Denshi-Kid Computer Weekly essay competition. The object was to forecast how computers and communications would be used and how these techniques would impact on society.

The standard of entry was high and the judges had a hard task selecting the winners (CW, June 8). Last week, when he presented the prizes, William Woollard of the BBC's Tomorrow's World series, who was one of the judges, commented on the wide range of ideas that had been developed. He said such competitions were important because they gave people involved in many areas of the information industry the opportunity to express their views.

Here (left to right) joint first prize-winner, Bryn Jones discusses the essays, with William Woollard, and Tony Thornton and John Finnis who each received one of the special Computer Weekly prizes.

Maintaining ops systems simplified by IBM move

By Peter Hewitt

IN a move which will simplify the job of maintaining operating systems, IBM is to introduce a new method of distributing Program Temporary Fixes to OS users.

Starting in August, VS1, VS2 and MVS users in the UK will receive monthly PTF tapes uniquely configured to their installed System Control Program and Selectable Unit form at licensed programs.

Each tape will in effect contain only those fixes which are relevant to the destination installation.

The service, which IBM refers to as the direct distribution of programs maintained for each customer in the European Program Library files.

for a customer to determine which fixes he needs.

The application of fixes is typically a lengthy job requiring dedicated access to the machine and, although some sites select from current distribution tapes only those fixes that they need, many follow a policy of applying every fix, whether relevant or not.

In either case, the job of incorporation of fixes can often arise.

The move is unlikely to affect the position of plug-compatible users, as full PTF tapes continue to be available.

Amdahl already delivers tailored PTF tapes to its users, based on the consolidation of IBM master tapes and incorporating the company's own modifications.

selection of relevant PTFs will ease the workload of system programmers responsible for maintaining the installation.

By establishing a monthly update cycle, the new system may also encourage the more speedy application of fixes. In view of the volume of work, some sites have scheduled the incorporation of fixes only when modifications.

Low-cost voice transmission system developed at Bath

A REVOLUTIONARY voice digitising method that could squeeze four or five times as many calls on to the same line as pulse code modulation, is being developed at Bath University, where it is sufficiently advanced for it to be the subject of a patent application by the National Research and Development Council. It could cost ten times less than existing low bit rate voice encoding methods.

Work on Time Encoded Speech at Bath has been led by Professor William Gosling, of the School of Electronic Engineering, and Brigadier Reginald King, now army telecommunications director at the Ministry of Defence.

Brigadier King told Computer Weekly that TES transmission was being simulated at Bath using a Digital Equipment PDP-8, converting speech into 1,000 bits.

At the receive end each symbol is decoded and the appropriate waveform generated.

secutive pair of zero points is analysed and categorised and its time interval measured. The shape and time are each assigned a numerical value and the two numbers form one of a group of different sound "symbols".

Similar systems will operate in the US and in the major European countries.

The system will be particularly appreciated by MVS sites, where the possible permutations of SUs can make it very difficult

symbols a second, each of five digits.

Implemented in hardware the system would cost no more than £100, according to Brigadier King.

Post Office to relax specs for System X

IN line with recommendations in the White Paper on the Post Office the chairman, Sir William Barlow, said there would be more tolerance on specifications for the whole range of equipment bought for System X.

Sir William said that overseas marketing would be done by the companies concerned, but that the Post Office would demonstrate the equipment to potential buyers and offer consultancy services.

"We want to do all we can to help exports," he said.

This relaxation of the traditionally rigid Post Office policy come as the corporation announced its results for the year showing a surplus of £325 million of which £325 million is pulled in by the telecommunications services.

Commenting on the plan, George McKendrick of the Institute of Administrative Management, who co-chairs its Telecommunications Managers Division evidence to the Carter Committee, described the System X relaxation as a step forward.

The White Paper also gives details of an agreement between the government and the Post Office under which real costs for telecommunications are to be reduced five per cent over five years. This is to be achieved in some time as showing a 45 per cent return on net assets of the Telecommunications Division.

Briefing

Unions' worry over micros

FOUR major unions have tabled resolutions relating to the impact of microelectronics for the TUC Congress in September. This has delayed until early next year the preparation of a major report by the TUC on the subject.

The resolutions from AUEW, Tass, the Society of Civil and Public Servants, the Post Office Engineering Union and National Union of Bank Employees cover a wide spectrum of the issues involved, including requests for government assistance to include software, and calls from all the unions for better government research and planning to cope with the social consequences of creating and using advanced technology.

Targets for action

CIVIL Service computer centres are believed to be among targets of the Society of Civil and Public Servants for industrial action if the government does not implement in 1979 the findings of the independent pay research unit, which provides statistics used in Civil Service pay negotiations.

DP needs

AN EXTRA 100,000 data processing professionals would be needed over the next 10 years, including 1,000 more computer graduates a year over and above the 2,000 currently being turned out by UK higher education institutions. This was the view expressed last week by Professor Mike Pitteway of Brunel University at the announcement of Brunel's microprocessor development laboratory.

Swansea halted

THE three ICL System 4s at the Swansea Driver and Vehicle Licensing Centre have been shut down for over a week because maintenance engineers are refusing to service the centre's air conditioning plant. This action, in support of a pay claim by government blue collar workers, has halted the issuing of driving licences and vehicle registration documents.

Modcomp addition

A SECOND, more powerful model has been added to Modcomp's new classic line of minicomputers in the US. Called the 7870. It takes up to one Megaword of two-way interleaved 16-bit memory, but otherwise is similar to the only other model in the line so far introduced, the 7860.

● Modcomp's Ken Harple calls to the show — see Page 7

ICLs for Calor

Tories to honour Labour commitments

IF returned to power at the next elections, a Conservative government would honour all commitments entered into at that time for supporting the UK microelectronics industry, according to the Party's industry spokesman Sir Keith Joseph.

Speaking after the latest announcement of support for the semiconductor industry by industry Minister Eric Varley — £70 million over five years from the Department of Industry (see page 3) — Sir Keith told Computer Weekly that the Conservatives would review all expenditure proposals from the present government but would not go back on any specific commitments made by the government.

And Hastings' Tory MP Kenneth Warren, who has taken a particular interest in the future of the electronics industry, commented that assistance from government sources for new industries was always welcome.

"There is a side benefit that government support gives a cachet of quality to companies' endeavours when they try to export new ideas," he said.

"We are at an advanced stage of discussion with the Department for support under both the development and the production schemes," he told Computer Weekly. "I think the Department's plans are extremely well-founded."

● Government micro plans, page 3.

Joseph . . . "Tories will not go back on any specific commitments".

BOC's £10m move into minis

THE board of BOC International has decided to spend £10 million over the next year on acquisitions that could make it a major force in the minicomputer systems business both in the UK and overseas.

Chief executive of the BOC computer services division, Brian Mills, told Computer Weekly that in the short term BOC was mainly interested in taking over UK systems houses, but that its intention was also to acquire firms on the Continent and in the US.

Mills pointed out that BOC already had a presence on the Continent on the bureau services side, through the DC Detasolve office in the Hague and the Datastream offices in Frankfurt and Rotterdam. Detastream is the financial services acquired by BOC about 18 months ago.

Another likely development at BOC, according to Mills, is the establishment of a microprocessor systems house, but this would be achieved by acquiring suitable people and building a microprocessor operation around them, rather than by taking over existing firms in the business.

Recently, the Grand Metropolitan group also set up a micro workshop to study microsystems applications for the group (CW, July 27).

Mills sees BOC as already being a major international services company, which is why he sees the establishment of a microprocessor systems house, but this total turnover from computer services this year.

According to Mills BOC's computer service business, which now comprises mainly bureau operations, is growing at a rate of 35% a year, even without acquisitions, and a move into minicomputer systems should take the company's total turnover from services over the £100 million mark by 1980.

In the US, BOC now has a major presence through its Airco, a billion dollar firm whose main line of business is the same as BOC's — industrial gases. Airco already has some involvement with computer services through the computer training schools that it runs in Washington DC and California.

In order to concentrate on the acquisitions project Brian Mills has stepped down as managing director of BOC Detasolve, the post being taken over by Chris Wood, formerly Detasolve's sales and marketing director. Mills remains chairman of Detasolve.

Tracking down long-stayers

THE Home Office is planning to introduce a computer to help track down overseas visitors who overstay their permitted time in the UK. This would catch people who try to get around immigration controls by entering the country on a short-stay visa.

The Immigration Service already carries out checks by hand on a random basis. The computer will allow this to be much more thorough.

US group seeks Euro links

THE young and growing Association of Data Communications Users in the US is keen to create links with user groups in Europe that share its interest in matters like international data networks and communications standards.

The executive director of ADCU, Dr William Saxton, told Computer Weekly that the association was deeply involved with domestic legislation, such as the new Communications Act which will dramatically affect the whole future of telecommunications in the US, including data communications (CW, July 20).

But Dr Saxton emphasised that "a dialogue across the ocean" was one of the aims of ADCU, pointing out that its 175 members included international companies like the Chase Manhattan Bank with computer operations on both sides of the Atlantic.

● Interested parties should contact the association president, John P. Complello, c/o ADCU, PO Box 1184, New York, NY 10018, USA.

IBA's Oracle freed from its chains

STRIKERBUND since its launch last October, the Independent Broadcasting Authority's Oracle teletext service is about to reappear in a new, improved version.

Previously, an operating system based on RT-11 was used, but the new configuration employs the real-time facilities offered by DEC's RSX 11M system.

In the government White Paper on the future of broadcasting published last week, teletext systems such as Oracle and the BBC equivalent Ceefax were said to have a potentially "profound effect on broadcasting and the 'Press' but no newcommunications were made on the "institutional and supervisory arrangements" that should be made to monitor the development of these systems.

UK switches to Telenet

THE UK public packet-switched network is likely to use US-built Telenet processors following problems with the switching system for the French Transpac network that has also caused Euronet, which is based on Transpac, to be delayed until mid-1979.

The Post Office has been considering Transpec and Telenet to provide a ready-made X25 switch which is based on Intel 8080 chips.

Telenet switch as a stop-gap for its all digital System X speech and data exchanges due in the early 1980s. Telenet processors in London are already used by the Post Office to access US networks.

According to Logica, a Euronet contractor, the problem with Transpac is in the CP-50 switch which is based on Intel 8080 chips.

COMPUTER WEEKLY'S INSIDE NEWS

Reports on the expanding worlds of word processing and telecommunications are featured in this week's international section (pages 16/23). The Canada Development Corp has come to the rescue of the foundering Wordplex organisation and is merging it with AES to form a group that would give appreciable potential in the market (page 16). Project Prelude gave a glimpse of what telecommunications could offer to the business community in Britain. Morris Edwards outlines some of the implications of this, satellite-linked experiment (page 18). There is also a report from Washington by Cameron Davis (page 19) and the Hesh Wiener took an even wider US scene (page 14). The Pointer describes some

APPOINTMENTS: Pages 26-45.

COMPUTERVIEW

Computers and politics tangled in a complex web

THE ban by President Carter on the sale of the Univac 1100 to the Soviet news agency Tass (see page 15) shows that computers have now become irreversibly linked with politics. But although politicians like to paint their world in terms of simple, clear-cut images, the entanglement of technology and politics highlights the difficulty of taking such a simplistic political line.

For example, although President Carter is still prepared to allow an IBM 370/148 to be used to control the information system at the Moscow Olympics.

The main Washington advocate of this approach is national security adviser Zbigniew Brzezinski, who was in the forefront of White House discussions which culminated in the Tass ban.

At the same time, however, the White House was taking positive action to increase its technological trade with China. Ironically approving the sale of two Univac 1100s to Chinese educational establishments (CW, July 6).

There are also reports that the Americans are trying to relax the rules for the sale of computers to East Europe, which is governed by rules developed by CoCom, the co-ordinating committee of the "Western" block.

The Americans are apparently interested in increasing the upper limit on permitted sales to the East to encompass the IBM 3031 level of power and, at the lower end, to include micros.

And President Carter is still prepared to allow an IBM 370/148 to be used to control the information system at the Moscow Olympics.

The whole issue, however, could be undercut by the ubiquitous micro. To try to ban the sale of micros is virtually impossible, given the small size of the devices, which can be slipped into diplomatic bags and pockets with ease.

In the long term, the technological commodity which will be in greatest demand is human skill — and the political systems which prove to be the strongest are likely to be those which encourage and foster the development of these skills.

Anatoly Scheransky is a distinguished member of the computer community; his is a talent the Russians cannot easily lose. This loss is a self-inflicted wound that could, if multiplied, prove to be far more damaging than the banning of the sale of one computer system to Tass.

FOCUS

EVEN the most academic DP professional by now must be aware of the sporting life currently being promoted by Computer Weekly. Particularly noticeable has been this weekly picture gallery of tee-shirted young ladies in various stages of windswept collapse at the completion of an invigorating steeplechase in the Computastars competition.

DP management views on the latest work distractions have yet to be put on file. These, however, may not necessarily be knowledgeable, especially as certain installations are already suffering from an energetic excess of Thank God It's Friday and Saturday Night Fever. Instructions could well be issued that data runs are limited to work progress; track events to disc handling; and that records should be stored — not broken.

Computastars, in fact, are not exactly new in the DP world. Many DPMs are stars following the wiping clean of a long cherished historic record floor when it is discovered that the line-up at the completion of a lengthy printer run has been erratic or the wrong date loaded. Stars are likewise seen during retrieval operations involving the lower level stock of stationery boxes when upper levels have been known to descend rapidly.

It must also be admitted that sporting events are not entirely unknown within the confines of the DP section. Many applications and projects are ragged ahead, as being a race against time. DP activities strongly parallel both games of fortune and chance while certain operating procedures are remarkably dicey. Park Lane casinos could well collect some helpful tips watching the DP operator dexterously changing packs with barely a break in the data flow.

Black-Jack could well be the installation engineer joker who seldom appears when required.

Games of chance include that of wondering whether the user department will lodge a formal company complaint in respect of work delayed three weeks running, or in taking a chance that the job in hand will be successfully completed despite the fact that stationery stocks are dangerously low; that the key to the back-up safe has been taken home by the previous shift; and that the faulty datacomm link does not deteriorate.

INTERRUPT

THERE was once a computer in an educational establishment which had a fairly simple operating interface. The operator just typed in a statement such as "LEG A" or "LEG B" etc. and the computer acted on the instruction. The console transmitted only the last four characters of the line typed.

One day a notable was being shown round the installation. He went to the console and typed, "MY BEST WISHES TO EVERYONE IN THE COLLEGE." So the operating system chose to pull in "LEGE" and things crashed.

Moral: Take care, or you may not have a leg left to stand on.
●This interrupt was submitted by John Parry of Logica, who will receive the £5 award.

Package tours to Sicob in Paris next month

TO enable Computer Weekly readers to attend Sicob, the big French computer equipment and systems show to be held in Paris from September 20 to 28, three special package tours have been arranged. There are two two-night packages starting on September 20 and September 22, and a four-night tour running from September 20 to 24. The first two cost £126 each and the other £186.

Flights will be by scheduled services of British Airways and Air France and accommodation will be in the Meridian Hotel, the centre of Paris. Full details of these packages may be had from Commercial Trade Travel Ltd, Carlisle House, 8 Southampton Row, London, WC1.

£1.25m ICL dual 2960 for Racal

TO take over and expand its real time manufacturing control system, the Racal Electronics group is installing a £1.25 million dual 2960 system from ICL.

The first processor with two Mbytes of store is already installed at Racal's new computer centre at Bracknell, where the group's HQ is located, and the second processor, a one Mbyte unit, is due to go in in January.

The 2960, which will run entirely under VME/B, will handle work at present loaded on 2904s at Bracknell and Reading, and on a 1904A at Tewkesbury. The 1904A is to be replaced with a terminal system or a front-end processor linked to Bracknell, and the 2904s will be redeployed.

So far Racal has about 15 of its manufacturing companies, using 80 terminals, linked to the real time system, and management services director Derek Norman says present plans envisage about 30 sites online via some 200 terminals.

One of the applications to be loaded on the 2960 will be an order processing and monitoring system that has been developed by Racal.

Portsmouth DP budget expanding

TO meet its increasing work load, Portsmouth City Council is to replace its IBM 370/138 with a larger 370/138 and take on six computer staff. The new machine, to be installed in 1979, will cost about £90,000 a year on a five-year lease, while extra staff are expected to add about another £45,000 a year to this.

"We will be taking on a database administration manager, three systems analysts and some programmers," said a council spokesman.

Siemens' office systems project

IN its biggest single project since World War II, Siemens is investing DM 500 million, or £125 million, in technology associated with the integrated office. The project envisages a single terminal unit incorporating telephone switching, voice and data transmission and facsimile systems. Such a device could rival the 8811 data telephone already introduced by Nixdorf.

Government commitment to industry now about £150 million

Varley announces £70m aid for micros

FIRMLY rejecting the "timid, short-sighted school of thought which says that there is no need for the UK to develop its own microelectronics capability when it can buy products from abroad", Industry Minister Eric Varley last week announced a £70 million five-year support scheme for UK-based microelectronic ventures.

The Department of Industry plan, exclusively revealed in Computer Weekly last year (December 1, 1977), now brings the government's commitment to the microelectronics industry to about £150 million, when the NEB's planned £50 million support for Inmos and the DoI's £15 million for micro applications are included.

● The microelectronics market is one of the least free in the world.

The level of support of the latest scheme, £14 million a year, is substantial when measured against the present total UK semiconductor output, which is estimated at £83 million in 1977.

Justifying this level of support, Varley said that although the unit cost of imported components might be a few dollars, very large numbers would be required, at a cost of "hundreds and hundreds of millions of pounds" to the balance of payments.

"We do not want to become prisoners of foreign technology for ever," he said.

He estimated that the proposed support, if all of it was taken up, would lead to investment on the part of the industry of some £260 million.

Of the £70 million total, £54 million is being provided under the Science and Technology Act 1965, for research development.

Research projects will be funded at up to 50% of eligible costs, recoverable where appropriate by a levy on the resulting products. Development projects will be funded either with grants of up to 25% or shared contracts of up to 50%. In the latter case, the ventures will have to be high-risk, or the company will have to be very short of cash, and the support will be recoverable by a levy on sales.

All attempts to get the major UK manufacturers, principally Ferranti, GEC and Plessey, to collaborate with each other have so far failed, but a carrot is held out in the form of even higher support in cases where collaboration would reduce duplication of effort, or produce enhanced results. This measure is also aimed at collaborations between a British and a foreign company.

Eligible costs are any equipment not regarded as normal tools of the applicants trade, up to 80% of the total development cost. The scheme is open to all companies operating in the UK microelectronics sector, including non-British owned multinationals.

Under the Industry Act 1972 (a Conservative measure, Varley pointed out) £16 million is being allocated for investment in production facilities, and grants will be made of up to 25% of the total cost.

This will be additional to any other grants available to companies for setting up in development areas or areas of high unemployment, Varley told Computer Weekly.

"The microelectronics market is one of the least free in the world," said the Minister. "The US has a tremendous lead because of its work in a major space and defence programmes. No advanced country will let it retain that lead unchallenged, and neither shall we. The Japanese have evolved a significant support programme for VLSI circuitry, and the French and the Germans are also planning support measures."

Effects on employment study switched to DoE

STUDIES into the employment implications of microelectronics that will be required by the Central Policy Review Staff, the government's "think tank", will now be carried out by a new group established by the Department of Employment.

The group, which comes within the Department's unit for manpower studies, is headed by assistant secretary Jonathan Sleigh, 38, a career civil servant, from the Ministry of Defence. He will be backed by a full time economist, plus another working part-time, and considerable part-time help is being given to the appointment of a computer systems specialist.

It has been established for one year initially and will be considering all potential effects, including the scope for new employment opportunities, and the potential cost to and displacement of existing jobs.

The group will try to estimate the manpower effects over the next five to ten years, and it will also consider the requirements for retraining and retraining during that period.

In particular, it is concerned in the early stages with the existing skill shortages in programming.

Merseyside claims

SEEKING to get the Inmos plant sited in the region, the North-West Regional Council of the TUC has written to local MPs urging them to press the claims of areas such as Merseyside, with over 12% unemployment.

Inmos not worried by 64K RAM production in UK by ITT

ALTHOUGH another UK-based company, ITT Semiconductors of Sidcup, Kent, will begin production of sample 64K RAMs later this year (CW, June 22), Iann Barron, co-founder of the National Enterprise Board's Inmos venture, is unconcerned at the apparent two-year lead time that ITT will have over Inmos.

Emphasising that Inmos planned to develop "quite a wide range of products," Barron pointed to market leaders Intel and Mostek as companies likely to provide stiffer competition than ITT. He also pointed out that "we have never confirmed that Inmos definitely intends to make 64K RAMs and, at this stage, I am not prepared to say whether we shall or shall not."

"ITT only started designing its 64K chip in June. The technology to manufacture them economically is not yet available, and the market is not ready for them yet, so I do not think they have a lead over us if we do decide to make 64K chips," said Dr Thomas. To put this into perspective, IBM currently uses 2K-bit chips in the large-scale 3033, but if it were to use 4K chips, a typical configuration with 8 Megabytes of main memory would require 16,000 of them.

Barron also qualified a statement made at the time of the formal Inmos launch.

"We said we were not going to second-source other companies' products, but what we meant to emphasise was that this would not be the basis on which Inmos would be built on."

The industry traditionally offered multiple sources for its products, he noted, adding that while Inmos had no plans to make its first product an item second-sourced from elsewhere, this might happen if it seemed appropriate at the time.

VARLEY . . . "we do not want to become prisoners of foreign technology for ever."

New division
TO stimulate awareness of microelectronics techniques, the Department of Industry has established a new Electronics Applications Division.

DOWNTIME by Chad

Buzz, buzz...

SOMETHING appears to be wrong with the US semiconductor industry. Like all good state-of-the-art (buzzwords) leading-edge-of-technology (buzzwords) industry, it has been second only to the computer industry in inventing punchy, succinct and imaginative terminology with which to describe itself — buzzwords.

But, suddenly, it appears to have lost the gift, or more alarming, picked up a classical education, for the new vogue expression in Silicon Valley is "crossing the Rubicon".

Is it, I asked myself, a new breakthrough in rare mineral technology? No, the phrase in question refers to the growing trend among the semiconductor companies to forwards-integrate (buzzword) their product ranges.

This is "crossing the Rubicon".

According to Chambers' Twentieth Century Dictionary, the Rubicon is a stream in Central Italy. In Roman times, it separated Caesar's province of Gallia Cisalpina from Italia proper. The first "crossing the Rubicon" was made by said Mr Caesar, a move that was taken as an open declaration of war by the Republic.

I am greatly saddened that the analogy is so transparent. The industry is obviously losing touch with itself, and possibly gaining a hold on reality.

● YOU will be familiar with the personle of our Good Neighbours, the much frantic struggles against the encroachments of French into French words far each now Anglo-Saxon technological discovery as it comes along. "Logiciel" for "software" and "materiel" for "hardware" spring to mind. "Informatique" is a catchy word, if untranslatable. Well, they have now come up with a new word covering the field of office automation: "bureautique." Interesting, but how does one translate it? "Buralclea?"

Confessions of a president

LAST month, the founder and president of Data General, Edson de Castro delivered an interesting speech to the graduating class of his alma mater, Lowell University. My spies, who have been known to scale the ivy-covered walls of academia to get their stories, brought back the following, more light-hearted, excerpts from his talk.

"I was told that this affair is called a commencement, but since I am an engineer, you will assume I can't write. I do sign a number of letters and forms and contracts. But they are usually written by somebody else. I talk to editors and reporters occasionally, although it doesn't seem to do much good. They are in the business of selling newspapers, and the opinions of engineers and businessmen don't help sell papers. According to the polls, businessmen, in fact, are respected about as much as politicians.

"I started a computer company, along with several other people, when we were not much older than most of you.

"We shipped our first computer to Texas University, and it was lost in transit. Ten years later we are building a manufacturing plant and development laboratory in Austin not just to avoid losing computers in transit."

So don't rush...

A CORRESPONDENT of mine received a letter from America recently bearing this stamp, with the letter A in place of a value. She wonders whether, as part of the computer revolution, the US Postal Service has gone hexadecimal?

● Has the US Postal Service gone hexadecimal?

Your bill was £2.60 and you have two previous convictions for shop-lifting.

Not wishing to disappoint her, I gather the explanation is rather more mundane. The US Postal Service, planning to raise its letter rate from 13 cents to 16, printed zillions of 16 cent stamps, but was then told by the government to keep the rate down to 15 cents. There were hardly any 15 cent stamps in stock, so a supply of emergency stamps was dug out of the back rooms, losing things over.

Don't bother to chase after the A stamps as rarities; there must be enough for every stamp collector in the world to paper his walls with.

Quite right

MISPRINTS, as every writer knows, can be very embarrassing. Take this sentence from a recent article on ICL CAFS in the computer press: "The statement that data records will be selected on the basis of what they contain rather than what they are stored is non-sense."

You're right, it is nonsense!

A revised American National Standard for Fortran, informally known as Fortran 77, was finally approved by ANSI in April this year (CW, May 18). The standard itself has not yet appeared in print, although a preliminary draft was published in Sigplan Notices in March 1976. Compilers written to the Fortran 77 standard are not yet generally available, although most manufacturers have indicated their intention to produce them. In this article, DAVID MUXWORTHY, of the Edinburgh Regional Computing Centre, summarises the main points of Fortran 77 by comparison with the previous (1966) standard. In a subsequent article, he will describe the train of thought currently being followed by the ANSI Fortran committee, X3J3, on the next standard, due in 1982.

Revised standard for Fortran

THE American National Standards Institution, ANSI, has completed work on Fortran 77, a revised standard for the language, formally defined as X3.9-1978.

The revision of the 1966 standard turned out to be an exercise in language development (by committee) rather than one in retrospective standardisation. Language facilities were standardised which appeared in few, if any existing compilers. Ideas on desirable language constructs were, and are, subject to wide debate and development and the project was in danger of becoming a continuous one. Then, after eight years, 30 man-years and $2 million a halt was called.

This means that no-one, including the ANSI committee members themselves, is likely to agree with every single decision on inclusion or exclusion of items, but most people accept that the new standard is a significant and necessary advance.

Great emphasis was placed on compatibility with the earlier standard and so Fortran 77 retains all the essential features of the language. In particular, the characteristic layout of statements, the maximum name length of six characters, and the programmer's control over data allocation through COMMON and EQUIVALENCE are retained.

A block IF is introduced but it relates only to code structuring and there is no corresponding dynamic allocation of data. The other major changes are the introduction of a type CHARACTER, the abandonment of type Hollerith and, at last, the introduction of mixed-mode expressions.

So far as possible, the committee attempted to generalise the language so that where the 1966 standard demanded a variable, Fortran 77 allows an expression and where formerly an integer entity was required, now any arithmetic type is allowed.

The new type CHARACTER, so far as is logically possible, follows all the normal rules of Fortran. A character variable may have its type defined in one statement and be dimensioned in another, character functions are allowed and so on. It is possible to access substrings.

The character type statement is in the style of the current IBM arithmetic type statement, so that a program unit could include the following statement:

```
CHARACTER*15
A,B(10)*2,C(2,4)*40
A = 'APPLE STRUDEL'
B(6) A(3) = 'EL'
B(4) (1:2) = B(3) (4:)
```

The interpretation of these statements is fairly obvious. Fortran 77 is accommodating to strings of different lengths padding with spaces or truncating on the right as appropriate. An omitted substring subscript implies the first or last position in the string. The colon, used here, in the array declarator and elsewhere is the only new character in the character set.

Characters may be equivalenced, but only to other characters, either explicitly or indirectly through COMMON statements. Zero length strings are not allowed. Character strings may be compared in relational expressions according to the collating sequence used by the processor and, in order to allow a machine independent comparison, functions are provided which use the Ascii collating sequence.

The only new character defined for characters is concatenation, with operator //. Character expressions, including constants, may be used in place of a format in a read or write statement and character strings may be used in place of a logical unit in a formatted input/output statement, thus giving the effect of ENCODE and DECODE but with a different syntax. In this example, numeric variables X, Y, Z are converted under format control to characters in the string C:

```
READ (C, 1000,67) X,Y,Z
```

Hollerith characters may no longer be stored in arithmetic or logical variables.

Fortran 77 includes commonly implemented facilities like mixed mode expressions, IMPLICIT, PARAMETER, ENTRY and direct access input/output, although not necessarily in the way manufacturers have already adopted. For example, direct access statements simply use record number of a keyword

last, the introduction of mixed-mode expressions.

Fortran 77 arrays may start at any lower bound, not necessarily 1, and may have up to seven dimensions. The array declarator and elsewhere may be expressions (of a limited type) and the rightmost (or only) dimension of an array used as a dummy argument may be specified as a *, thus formalising the long established programming convention of writing 1 in this position. Subscripts may be an integer expression, subject only to conditions about side effects of function references in the same statement.

Mixed mode expressions are allowed for every combination of arithmetic variable except for the combination double precision and complex; this is because the data type double precision complex does not exist.

Fortran 77 input/output is a little different in facility from that available on most large machines but there are some differences in syntax as mentioned above. Compared with the 1966 standard, direct-access and free-format input/output have been introduced, together with OPEN and CLOSE statements which are optional for named files, the INQUIRE statement which may be used to determine certain file attributes and the concept of 'internal files' which are in fact 'character' strings.

There are minor extensions to format codes, for example to force the printing of leading zeros and to cause blanks in numeric input fields to be treated as null characters rather than as zeros. Surprisingly, the .nH... form for text is still allowed in a FORMAT but not in a DATA statement.

The library functions have been tidied up and extended, made

REC...

The value of the DO index is defined on completion of a loop to be the value it would have had for the next iteration had there been one. The extended range of a DO-loop is no longer allowed.

The form of the block IF is

```
IF(e)THEN
  statements
[ELSE
  statement]
END IF
```

In place of an ELSE there may be an ELSE IF(e)THEN followed by a block of statements up to a following ELSE, ELSEIF or ENDIF. Transfer into such a block of statements from outside the block is prohibited.

The two men asked that they should cease to have any responsibility for the computer system "to avoid any possible criticism in the future."

Data Dynamics aid Brunel micro lab

A joint venture to develop micro-based systems and products is being set up by the Computer Science Department of Brunel University and terminal manufacturer Data Dynamics. The basis of the arrangement is £15,000 worth of power supplies and other hardware from Data Dynamics for use in the department's new microprocessor laboratory. This will greatly augment the meagre £18,000 a year that the department is allowed for new equipment.

Two conditions of the Data Dynamics contribution are that its personnel will be able to use the lab, and that the company will have the right to exploit any commercially viable developments that may result from researches carried out.

Head of computer science, Professor Mike Pitteway, says marketable developments would be patented by the National Research and Development Council and the profits shared by Data Dynamics and Brunel.

The laboratory will be used mainly by fourth year students carrying out microprocessor oriented projects.

Professor Pitteway, who is a technical consultant to Data Dynamics, points out that any project carried out in the lab for Data Dynamics that had a commercial deadline would have to be paid for by Data Dynamics in the same way that any other company would have to pay.

He adds that the lab would be able to produce microprocessor software that could be of value to Data Dynamics and other

hardware manufacturers using microprocessors in peripherals and terminals.

Data Dynamics believes that the lab should be able to help it in programming the microprocessors in its ZIP series of terminals. The newest of these is Tele-ZIP, a portable display terminal that comes with a keyboard, an acoustic coupler and the necessary electronics to enable it to plug into a standard television receiver. Having no integral VDU it costs only £550, and typical uses include programming at home and order entry by salesmen.

Data Dynamics will retain ownership of the equipment donated to Brunel, but will maintain it free of charge. The lab will be run by computer science lecturer Tony Ellerman.

Row over South African trip results in new selection system at Leeds

A NEW computer technical working party is to be set up by Leeds City Council to choose its next computer system, when the order is put out to tender in the early 1980s.

This follows a shift of responsibility for the computer from the Department of Finance to the Department of Administration, made earlier this year after the council investigated a trip to South Africa financed by ICL, which was made by James Beer, the director of finance who chaired the old working party, and Kenneth Potts, the chief executive.

Following the investigation

the two men asked that they should cease to have any responsibility for the computer system "to avoid any possible criticism in the future."

Leeds now uses an ICL 1904S system, but according to Coun Keith Loudon, a member of the council's computer sub-committee, which was set up last month, ICL will not receive the next order automatically, but will have to compete at least with the three manufacturers which have previously tendered Honeywell, Univac and IBM.

"Computers wear out," said Loudon, "and our experts have told us that our present ICL

machine will last only until about 1980/81. As the installation of a new computer at that time will mean the expenditure of a vast sum for the city, we feel that any decision on what system to use can best be made by a technical working party.

"It has not been established yet," he added, "but the computer sub-committee is due to meet this week to discuss who should sit on it."

Loudon also says that now that the computer system comes under the Department of Administration, "we hope to develop wider applications and make it a tool rather than a master."

Aspinall moves to UMIST

APPOINTED professor of computation at the University of Manchester Institute of Science and Technology is Professor David Aspinall, currently at University College, Swansea.

Aspinall is head of the Department of Electrical and Electronic Engineering at Swansea and is known for several research projects.

Security service

THE security service proposed by the National Computing Centre is to go ahead and details should be available soon. The service (CW, May 11) will act as an umbrella organisation for education of users in computer security.

Settling down

FINANCIAL secretary to the Treasury, Robert Sheldon, has admitted to the Commons that new procedures introduced at sea ports where computer systems are being installed for online imports clearance were "somewhat slow" but were "settling down."

A 'model' DP manager

Concern for the morale of his own staff and the needs of his users were the chief factors in earning Roy Hedling-Brown, of Hornby Hobbies, the DP manager of the year award for 1978.

Hedling-Brown (pictured left) received this year's DPMA/Data Logic award of £250 and a silver punch bowl and cups from Data Logic managing director Alan Thomas at a reception last week in the Savoy Hotel, London.

The award, which was first presented last year, aims to reward outstanding achievement in DP management.

This year's judges were impressed by the way in which Hedling-Brown involved his staff in improving the performance and customer service of the company's ICL System Ten installation, which handles sales, stock control and invoicing applications.

Andrew Lawin, DP director of insurance brokers J. H. Minet and Co, who has been involved in upgrading from an IBM 360/22 to an IBM 370/125 installation. He won second bowl and £150.

Neville Taylor, chairman of the OPMA, commented that the judges had displayed exceptional achievement in orienting and maintaining staff morale, which he believes is the key to successful DP management.

In addition to Taylor, the judges for this year's awards were Brian Elson, managing director of Selcon Computer Services, Derek Scrivener of the National Computing Centre, Innes McGeoch of the London Business School, last year's winner Sydney Perkins of International Harvester Ltd, Ken Owen technology correspondent of The Times and Kit Grindley of Urwick Dynamics Ltd.

£2.5m airlift of ICL machines to Australia

IN one of the largest airlifts of computer equipment, 35 tons of ICL 2900 mainframes were loaded into a McDonnell Douglas DC-8 in Luxembourg and flown to Melbourne, Australia. The DC-8 was chartered from the Cargolux freight carrier, and

the shipment was handled by EMG Air Services, which carried the machines by road and sea to Luxembourg.

The precious payload, valued at £2.5 million, consisted of two 2960s, one for the Australian government in Canberra, and

the other for Swedish telecommunications company L M Ericsson in Melbourne and, the first two 2960s to be shipped abroad, both of which were for Comsuite Buyers Ltd, Melbourne grocery wholesalers. Ericsson is replacing a 1903T.

MICHIE'S PRIVATEVIEW

When the drill sergeant's days are done . . .

DO computers ever get bored of being instructed via interminable streams of imperative commands?

The helpless indignity of their situation puts me in mind of the recruits marching towards the edge of a precipice-bed barrack square: "For God's sake say something, sergeant, even if it's only good-bye!"

For such of the world's training machines as may be afflicted with ennui or despair, I have news. You too may one day have to think for yourselves.

Tomorrow's programmers will one day indolently disburden themselves of the drill-sergeant chore. How relaxing it is to be able to bark out "... left, right, left, right ... about turn ... left, right ... now get home using your bleeding common-sense!" end then withdraw to the mess-room.

The most forthright expression of this excellent laissez-faire notion is that you should equip the machine with a basic reasoning engine, and thereafter tell it nothing but facts on the understanding that it will do its best with them. As you build its stock of knowledge with just the right set of relevant assertions about what is or is not the case in the world of sorting, merging, data control, queueing, scheduling, game-playing, or whatever, so the system builds its own capability to sort, merge, control data, manipulate matrices, etc., almost through its own effort to prove that any "goal" statement fed to it really can be deduced logically from its accumulated store of facts.

Let us consider, for example, what are the relevant facts about the concatenation of two lists L1 and L2 to make a

third list L3. One obvious fact is that for any list L the concatenation of nil (the empty list) with L is just L. Another, perhaps, that the needed amount of additional meat to it, says that if the concatenation of L1 and L2 is L3, then the concatenation of X.L1 and L2 must be X.L3. Given knowledge of only these two facts, a logically-minded system ought to know exactly what to do when told that the concatenation of Tom, Dick, Harry and Mary Jane, Lou, Priscilla is the list known as popgroup.

How do we find out whether the system has been smart enough to work out the only substitution ("assignment" in the world of imperatives) for popgroup consistent with the known facts? Try 'prin (popgroup)' and prepare to register relief if we get "Tom, Dick, Harry, Mary, Jane, Lou, Priscilla".

In 1971-72 Bob Kowalski then still at Edinburgh, was saying this sort of thing with a wild gleam in the eye and a wealth of technical detail. In effect he was saying: "Whatever you want the system to know, tell it the facts in first-order predicate logic: The result will have an obvious declarative semantica — it is quite unambiguous in what it says about its problem world. If, moreover, the system is equipped with a theorem-prover behind the scenes, capable in principle of deducing anything deducible from the starting facts then whatever you like it or not, the logic statements now take on a second life. They acquire a procedural semantics.

What this means is that we can forget the past dismal 30 years of drill-sergeant programming, and use as a programming language a

vehicle which has been there all the time, much studied and well understood by mathematicians, namely first order predicate calculus."

Kowalski showed in detail how a theorem-prover based on J. A. Robinson's "resolution principle" could be made into an interpreter for such a language. But his hearers did not like any of this. Some felt that he was right but mad, others that he was wrong if only they could think exactly how. The majority took the pragmatic view, tried and tested on prophets in all times and ages, that you might as well ignore the whole thing until you are shown a miracle or two.

Miracles take time and sweat and ingenuity and dogged- ness and flair. Kowalski's disciples in Edinburgh, Marseillea, Western Ontario and Hungary have deployed these qualities in good measure over the intervening years. The name of the resulting miracle is PROLOG, a programming system meticulously faithful to the sweep and simplicity of the original concept, but actually running on commercial machines with efficiencies fully comparable with, for example, Stanford's highly optimised pure LISP system.

Those who, like myself, have for many years followed the PROLOG development and have done a little PROLOG programming are inclined to over-excitement. I find myself not only planning to retool my own laboratory's work on the new basis, but speculating about the "expert systems" of the 1980s.

Donald Michie

Predictions over DG Eclipse fulfilled

INDICATIONS that Data General would add commercially-oriented software to its latest Eclipse computer, the M/600 (CW, February 2), have been fully borne out by the announcement of major enhancements to its multiprogramming Advanced Operating System (AOS).

In addition to Cobol and RPG II compilers, the new facilities include DG's interactive data entry/access applications development tool Idea, the Infos file management system and a powerful sort/merge utility.

All the software was previously available under RDOS on Eclipse C/330 systems, and will now be supported under AOS on both C/330 and M/600 systems.

The five products are functionally identical to those offered under RDOS, notes the company, and present an unchanged interface to the user. However, the work of transferring them from the single-user RDOS environment has not been trivial, and has been accompanied in some cases by significant internal changes, according to a spokesman.

The commercial multiprogramming extensions to AOS have been in use for periods up to a year at some eighteen test

sites, including one in the UK, North Thames Gas. Regular deliveries are scheduled to begin early in October.

Sold to be the only minicomputer Cobol to implement the Ansi 1974 standard at its highest levels, AOS Cobol includes an interactive debugging package using Cobol-like verbs. The package lets users set traps or breakpoints, examine and modify data items, and then resume execution.

In common with the RPG II compiler, and with the PL/I software released earlier this year (Software File, January 26), the Cobol compiler is shareable, so that a single copy can serve several users concurrently.

An enhanced implementation of IBM RPG II, the AOS version is said to be highly compatible with both System 3 and 360/370 DOS RPG II. The software includes an editor, program analyser, an interactive symbolic debugger, and interfaces to Infos.

Idea also provides access to Infos databases, allowing data validation against files at entry time, and dynamic updating from online terminals.

The system, in addition, offers a terminal monitor, supporting automatic transaction logging and allowing overall control

from the supervisor's console. Facilities are also available for designing and storing new formats interactively.

An interesting feature of Sort/Merge is that the user can specify his own collating sequence, in addition to the standard Ascii sequence. The routines accept files generated in any AOS language, including Infos Isam and database formats.

The addition of Cobol and RPG II brings to eight the number of languages supported under AOS, which previously offered Fortran IV, Fortran V, Basic, PL/I, macro assembler, and DG/L version of Algol.

The commercial enhancements are priced at £2,660 for Cobol or Idea, £1,880 for RPG II or Infos, and £504 for Sort/Merge.

December launch

AN international quarterly journal is to be launched in December aimed at engineers, scientists, and managers involved in using programs for engineering. Called Advances in engineering software, it will be published by Computational Mechanics, 6 Cranbury Path, Southampton. Tel: 0703 87091.

UK firms set to reap spin-offs from Japanese computer drive

PREDICTIONS that the Japanese thrust into the world computer market would create significant opportunities for the UK software industry have been vividly confirmed by news that Altergo is anglicising some 150 manuals for the Fujitsu OSIV/F4 operating system.

The contract, which was awarded to Altergo by Ketron Inc of Pennsylvania, is believed to be that negotiated earlier this year as the first under the NCC's Interlock scheme (Software File, January 5).

Valued at around £90,000, this was announced as an unspecified technical writing job. Altergo however, would neither confirm nor deny the connection.

Dr David Freeman of Ketron told Computer

Weekly last autumn of the enormous opportunities that the Japanese initiative would offer (CW, October 13, 1977). His company has been retained by Fujitsu to advise on US marketing.

Altergo's chairman, Raj Thomas, told Computer Weekly: "We are turning the manuals into Japanese English into English English. We estimate that it will involve about five man-years effort, but we have put in one man-year so far and have done about 10% of the work."

Thomas noted that some 70% of Altergo's business is done abroad. Revenue is predicted to reach around £6.5 million this year, with around £1 million coming from the US alone.

Worldwide, sales of the Shadow II IBM 360/370 TP monitor account for about 40%, but in the UK business consists almost exclusively of Shadow sales, which are currently stand at about 75.

Altergo also markets Spaceman disc management system in the US, under licence from Corodale BV in Amsterdam. It has installed it in 30 DOS and DOS/VS sites in the US since March, according to Thomas. Spaceman is marketed in the UK by Macro 4 (CW, January 5).

With eight offices already open in the US, Raj Thomas said that he was not actively seeking a partner for Altergo, but was prepared to listen to all offers. Not philosophically opposed to a deal with Insac, he noted that "they would have to put in much more for their pound more than they have done so far before we would be interested."

Another significant overseas operation is Altergo's computer training school (in Dublin, see two years ago (CW, October 19, 1976). The school currently has about 120 students, mostly from the Arab countries.

PROGRAMMER NOTES

Databases demand more skills

THE days of programmers who are just programmers are pretty well over with the advent of database systems, maintains John Hampson, an analyst-programmer with Unilever Computer Services.

"Working with Ramis, I don't sit in a back room doing away all day, I go to the client and take a brief on what he wants and then follow the whole thing through.

"It's a programmer, systems analyst — even salesman and that means that life is much more interesting for me and more coordinated for the client."

John noted that once the database management system is set up, writing actual programs takes a fraction of the time that they would take in a non-database environment.

"It's the flexibility that gives the user that really counts. When I worked in PL/I or Cobol, I might take two or three weeks to write a program and then another two or three when the user changed his mind about the information he wanted.

Unilever uses, is only one example — I scribble out a design in two or three hours. It's no great disaster to change it two or three times until the user gets exactly what he wants."

In the future John sees smaller users running a centralised database system and larger ones linking a distributed network to a database. He thinks that many large users will maintain their databases on a bureau because of the ease of operation this affords them.

"The bureau industry can't really compete against minis and micros for the smaller applications, but will continue to be the sensible alternative for larger users — especially now when staff are so hard to find."

John has found that accountants are better to deal with than DPMs. This, he claims, is because DPMs tend to exercise control on the way things are done and are not nearly as clear about what they want.

"Accountants are a much maligned breed — they really make the best users. They know exactly what they want but

don't interfere with the way it is achieved."

"They don't know anything about computers and don't want to. As long as you produce the goods, they leave you alone to get on with it."

"I've been quite lucky, both because my clients are pretty easy to work for and because I work in Ramis, which means that things can be changed without any fuss if somebody does change his mind, but I have seen guys tearing their hair out because they have to re-do but because they have taken them a few weeks — just because the client changes his mind. And, on most of these occasions, the client is usually a DPM."

"John has been with UCSL for about three years and thinks he will probably stay in bureau work for a long time to come. "In a bureau, time literally is money and so you are constantly under a lot of pressure. If you want a peaceful life, bureau is certainly not the place to be; it's not right for some people, but I love it and I suspect that I would be really lazy if it wasn't

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Xerox Sigma replacement pack ready

THE hardware on which Xerox users will run the new compatible CP-6 operating system has now been announced by Honeywell and is aimed at users of Xerox Sigma 9 and large Sigma 6 and 7 systems.

The announcement, so far only made to Xerox users in North America, includes two top-end models in Level 66, designated Level 66/DPS/C3 and C5. The C3 model is designed to support up to 120 time-sharing users and the C5 up to 200.

CP-6 is an adaptation of the Xerox Sigma CP-V operating system.

The new operating system, designed to preserve the main features of CP-V while running on the 36-bit Level 00 machine rather than the 32-bit Sigmas, comes with new re-entrant language processors for Cobol 74, Ansi Fortran, APL, Text and Basic, and will also support the Honeywell IDS II database system.

The hardware is an adaptation of Honeywell's new top-end Level 66/DPS systems which supplant the 66/60 and 66/80.

Biggest problem for Honeywell — and for users — is that the hardware-software package will not be available until November 1979. This, allied with the cost, may well lead significant numbers of users to opt for the alternative from Telefile.

Informatic's European moves

BEST known for its Mark IV data management system, of which more than 1,200 installations have been made, the software products division of Informatics Inc is quietly building up a strength in the European market for applications software-and showing a cautious interest in the small systems market.

Both trends are exemplified in the announcement of an IBM System 3 implementation of the Accounting IV/ General Ledger system.

Offering virtually the same capabilities

as the mainframe version, the software includes a series of user-oriented report writers and will be available in Europe later this year.

In addition to standard general ledger functions, the system offers features for budgeting, profit planning, cost allocation, and foreign currency conversion. Report writers available include a free-form English-based language for producing financial statements, a matrix report writer, and graphical output facilities.

The mainframe software, written in Ansi Cobol, runs on IBM and Burroughs systems and has about 350 users, predominantly in the US. A version for Honeywell equipment will be ready next year.

Usage in the UK was originally restricted to the UK offices of multi-national companies but several sales have been made in the last year to major British-owned firms and installations in the UK now number 10.

One recent customer, International Stores, evaluated seven similar systems before opting for the Informatics package. Having developed and outgrown its own ledger system, International Stores chose to purchase a system because of the prohibitive cost and time penalties of internal software development.

Accounting IV/General Ledger is part of a comprehensive family of accounting systems which also includes packages for accounts payable, accounts receivable, and standard produce costing.

Due to be released in Europe later this year is a powerful extension to the Accounting IV/ Accounts Payable system. Designated the purchase order commitment module, the new product will permit three-way matching of purchase orders, receiving documents, and vendor invoices.

An Informatics spokesman noted that the company is gearing up to become a full-line supplier of application systems to financial and insurance users. It had already acquired a personnel system from a company in Milwaukee, Wisconsin and was in the process of acquiring a payroll system, he said.

The spokesman confirmed, however, the company had experienced a setback in one of its earlier application ventures, Production IV (CW, May 20, 1976). This package, he said, was no longer actively marketed either in the UK or the US.

In addition to being too expensive to market, it had also been too demanding in the skills required.

OS PTFs: no problems for non-IBM users

ALTHOUGH IBM's new system for distributing OS PTFs (CW, July 27) raised initial doubts about the position of look-alike manufacturers such as Amdahl, it seems in fact unlikely that the move will raise any problems for non-IBM users of IBM operating systems.

One anxiety was that the new distribution method

brought one step closer the possibility of IBM maintaining systems software remotely via a telecommunications link.

One US manufacturer, Basic Timesharing, has already implemented a system for remote online maintenance of installed systems software, which it operates in conjunction with a system for remote hardware diagnosis.

With the 3030 series, IBM introduced its own remote hardware/software check-out service, based on the remote support facility (RSF) option. This facility, an attached diagnostic processor, allows IBM customer engineers to exercise an installed machine under the control of central mainframes connected via the public telephone network.

Comparable with Amdahl's remote diagnostic service, RSF and its links to a worldwide network of debugging processors in effect supersedes the existing Retain/370 database.

However, the volume of PTF material involved would make its delivery over a low-speed communications link very lengthy and — as a result — expensive.

Now Contu recommends copyright protection

THE US National Commission on new technological uses of copyrighted works (Contu) has finally come down in favour of recommending copyright protection for software.

Contu was previously unable to agree over software copyrights, but had no such problem in recommending copyright protection for computer-readable databases.

The vote this time, ten in favour with two

against, will be reflected in the commission's final report to Congress following nearly three years of work. Congress was also recently invited to consider the question of software patentability.

Dissenters on this occasion again included the writer John Hersey (Software File, March 23) who was joined by Rhoda Karpatkin, executive director of the Consumers Union.

The final report will also suggest that Congress examine the question of extending copyright protection to semiconductor devices manufactured from a mask, according to a senior attorney on the commission staff.

He said that counsel for Intel had told the Commission that semiconductor manufacturers needed copyright protection to prevent unauthorised copying of circuit designs.

Puzzler

OTTFFSSENTETE
known series of initial letters
and FRMAMJJASON
another. But what do you make
of the following?
VLESCAP
See page for solution.

Digico launches a teaching system

A TEACHING system called Tutor has been introduced by Digico. It consists of a choice of hardware based on a Digico M16 series processor, an 11 Megabyte disc, and up to 16 Regent VDUs, together with a suite of Basic programs for the construction and operation of courses.

The system includes no course material; Digico intends teachers to design all this themselves. Courses can consist of text, multiple choice questions,

and branches according to the answers the student gives.

Because all the software is in Basic, the system can be used for other applications, such as administrative tasks, while Tutor is running.

Tutor was demonstrated to Mrs Shirley Williams, Secretary of State for Education, when she visited the company's Stevenage, Herts, plant to present a Design Council award. This was for the M16E mini, a 16-bit word machine which uses a microprogrammed processor instead of random logic, enabling the number of chips needed to be reduced from 400 to 180.

● Digico has also scored in another area. Seven of its 1602 communications systems have been ordered for the British Library's Merlin online book catalogue project. The £150,000 order includes 40 Regent VDUs which are being installed in London and at Boston Spa, Yorks. These will provide access to Computel's ICL 2960 at Bracknell which at present carries the Merlin database.

and wrong answers, etc.

One program is used to run students' sessions while another allows the teacher to input the course material, the text, the questions, the right
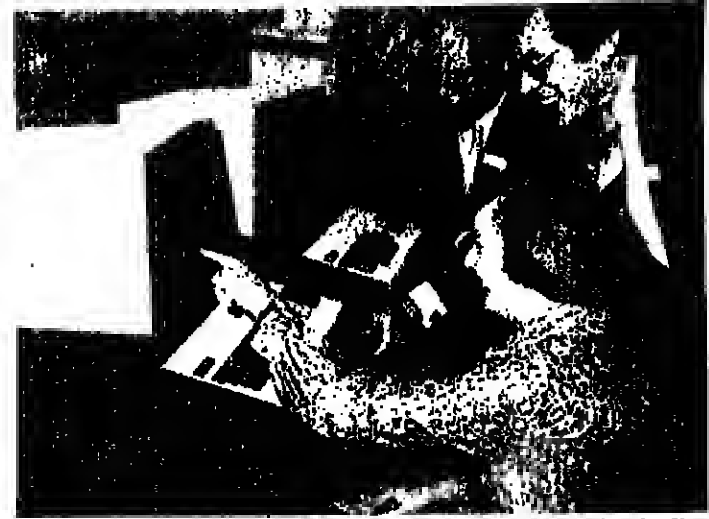
Education Secretary Shirley Williams has Tutor explained to her by Ken Atkinson, Digico marketing director. Looking on is David Harington, software services manager.

Second order for Manman

THE second order for Selcom's manufacturing management system, Manman, has come from Oxford Electronic Instruments, manufacturers of medical electronic equipment, which will use it to store and

process information relating to stock, sales and the delivery of its goods. Valued at £65,000, the system ordered consists of a 128K Hewlett-Packard System 1000 with a 50 Mbyte disc store and four VDUs.

Leo staff reunion is planned

A REUNION of staff who worked for Leo Computers during the 1950s and 1960s has been proposed by one of their number who now works for ICL, and he would like to hear from others to see how much interest there is in such a gathering.

Roy Ferrant, now an ICL sales manager, says that an informal get-together was held some time ago, attended by 60, so he thinks a more organised event

could attract 150 of the staff who formerly worked on the Leo II and Leo III-1 at Hartree House, Queensway.

The reunion would be held in London. Anyone interested should get in touch with Roy Ferrant at ICL, City Wall House, Chiswell St, London EC1, telephone 038 5622. Having assessed the response, he will then announce the arrangements.

Scots firm introduces a security system for North Sea oil rigs

A PERSONNEL security system for North Sea oil rigs has been introduced by Rockall Data Systems of Aberdeen, using terminals from another Scottish firm, Fortronics. The system keeps track of the movement of staff between shore bases and oil rigs, checking on authorisation to protect against possible terrorist attacks and recording information on staff as required by law. Oil rigs are considered to be prime targets for terrorists.

All staff are issued with magnetically-encoded identity cards carrying a photograph. Before boarding, the helicopter to fly to the rig, they insert their cards into a terminal, which checks that they have been authorised to travel. On arrival

at the rig, the cards are inserted in another terminal, so that a constant check is kept of everyone's whereabouts.

This information is also important in the event of accident or emergency. The system can be expanded to record hours worked as well, to help in producing payrolls.

In a separate move, Rockall has opened a secure data centre in St James' Street, London, for storing tapes and other media in a controlled environment and protection against theft.

GA wins chemical contract

TO help it maintain high standards of quality in its acrylonitrile and hexamethylene diamene (raw nylon) manufacturing process, Monsanto, the UK subsidiary of the US chemical giant, has installed a General Automation data logging system at its Seal Sands, Middlesbrough, plant.

Valued at £130,000, the equipment comprises 18 GA 40 microprocessors, two 16K central processors, a 600 lpm printer, a matrix printer, two 1 Mbyte disc drives, five VDUs and three teletypes.

The testing procedure involves taking samples of raw nylon for laboratory analysis and logging the details of these samples on the GA system.

UK services company goes into PoS market

ENTERING the point-of-sale system market, Pritchard, Brown and Taylor, the UK market research and computer services company, has announced details of its Salepoint PoS system.

Based on Computer Automation's Naked Mini and programmable Datapod 2000 PoS terminals, Salepoint is a distributed system aimed both at the top-end, supermarket-size organisations and the smaller retailer who requires just a few terminals.

Pritchard, Brown and Taylor has also announced that two Salepoint systems have been sold already: one to the British Market Research Bureau which will use it to collect

data from a large number of retail outlets, and the other to Woking-based Garage Management Services, the parent company of Datapod, which will use it to provide a point-of-sale information service on a bureau basis to petrol stations.

Initially, the GMS system will use one 32K Computer Automation Naked Mini, but this eventually will be expanded into a dual processor system to handle additional terminals.

Value of the two orders is put at about £35,000 excluding the cost of the Datapod terminals, the quantities of which have yet to be decided.

Applications which PBT envisages for Salepoint include stock control, sales analysis, VAT accounting, and management information/financial reporting. It can also analyse customer payments into cash, cash card or cheque categories.

All software for the system has been developed by PBT, and this includes communications software for automatic overnight polling of terminals and control software for the handling of multiterminal accessing, signal errors and failed terminal identification and polling. PBT is also looking at the possibility of running a PoS bureau service.

IBM's new head of Office Products

SHORTLY after announcing that it is studying the possibility of making its General Business Group a worldwide subsidiary, IBM has changed the man at the top of its Office Products Division, one of the two main divisions of the group.

The new president of OPD is Richard Young who was vice-president of communications — the top public relations job at IBM. He takes over at OPD from James Forese who is now IBM's assistant treasurer.

The IBM study that could lead to General Business Group being made a worldwide subsidiary will take several months to complete, according to the company, and will include the US and the 21 other countries that have GBG organisations.

The other main part of GBG is the General Systems Division, which sells the System 32, System 3 and System 34 small business computers and the Series 1 minicomputer. The latter represents one of several areas of conflict between GSD and IBM's DP Marketing Group which sells mainframes and network equipment, because Series 1 is offered by GSD as an alternative to the DP Marketing Group's 3790 distributed processing system for use in SNA networks.

The Office Products Division has become one of the less profitable parts of IBM over the last few years and in 1977 it returned an operating profit of 9.4 per cent compared with the 26 per cent margin achieved by IBM as a whole.

The answer is a lemon

ON a floodlit bill board, perched above the rooftops of St Louis, Missouri, a massive placard declares, "Our IBM computer system is a Lemon," and it is signed "A Dissatisfied Customer." To emphasise the point the sign is illustrated with a large lemon. According to a report from the States an IBM spokesman said, "We know it's up there. We don't know who put it up . . . but we are

trying to find out. We'd like to sit down with him and discuss the situation."

Later the company said that it know who the user was but wasn't letting on. It added that General Systems Division personnel, the people concerned with Series 1 and System 3, were "working with the customer" to resolve his difficulties in a "businesslike manner."

First new Criterion in UK

CITY commodity trader J H Rayner is replacing its six-year-old NCR Century with a 128K NCR Criterion I-845, the first to be installed in the UK. The new system, costing £200,000 includes seven VDUs and two 300 lpm printers. It will provide online trading information, and New York and Amsterdam offices are to be linked to it shortly.

Mass storage system installed at Tesco

UP to 102,000 Megabytes of data can be held in the IBM 3850 mass storage system installed at the headquarters of the Tesco supermarket group, Cheshunt, Herts. Each compartment in the honeycomb array holds a magnetic tape cartridge with a capacity of 50 Megabytes and a data set recorded on any of the cartridges can be accessed in 10 to 15 seconds.

The availability of the mass storage system from IBM was one of the main reasons for Tesco's decision to switch from ICL to IBM last year (CW, November 17, 1977). Other reasons listed by Tesco were the high speed printing facilities provided by the IBM 3800 laser printer and the "systems availability" possible from the MVS operating system.

Tesco says that MVS was chosen in preference to ICL's VME/B because it had far fewer unpredicted breaks than VME/B and could handle a much more

complex job environment. Tesco could not wait for ICL to correct these shortcomings.

Tesco's data processing plans include the implementation of an SNA network which will involve about 10,000 terminals located all over the UK when it is complete in about 10 years from now. About 8,000 of the terminals will be PoS units installed at Tesco supermarkets.

One of the two mainframes ordered by Tesco from IBM, a 3033 that has already been installed, is the first 3032 in the UK, and the other machine, a 3031, will go in at Cheshunt early next year. Conversion of Tesco's 700 ICL programs to IBM is expected to be 80 per cent completed by autumn 1979. Nearly all are written in Cobol.

● An engineer is pictured installing the IBM 3850 mass storage system at Tesco's Cheshunt headquarters.

US 'word machine' based on the 360

A NOVEL design of large-scale word processor is to be introduced in the US by a computer leasing company, partly as a way of using up its outdated IBM 360s.

DPF Inc of Hartsdale, New York is now testing its "Word Machine," which typically uses a 360/30 ns CPU, 3330 disc storage, and between 10 and 50 specially designed intelligent terminals as typing stations.

The software will run on any 360, 370 or Amdahl machine, and provides a word processor of considerably greater power than any currently available.

With a big CPU, there is virtually no upper limit to the number of terminals that can be used, but the system would not be economic with fewer than 10.

Each terminal has a Diablo daisy wheel printer attached to it, but other IBM peripherals can be used such as the ultra-fast laser printer or a COM recorder.

Each terminal has its own Intel 8080 microprocessor, but no

PROM: the software is all stored on the mainframe and read into the terminal when required.

This means that there can be a very large range of functions available — over 100 different programs at present. The screen is 64 lines by 80 characters, with sideways scrolling up to 200 characters.

Incorporated in the mainframe software is an automatic indexing system that enters every non-trivial word in a document into a giant inverted file.

Retrievals using Boolean logic can be used to find documents long after they were written. The link-up with COM could be useful in connection with this, as purges could transfer documents that are no longer needed online on to microfilm automatically, while keeping their indexing on the computer.

Automatic indexing for microfilm is a subject in which there is considerable interest, and Kodak is already testing the

Word Machine in its own applications.

Costing between $150,000 and $214,000 for a 10-station system, the Word Machine is not cheap, but it may form the beginnings of large-scale communicating Electronic Office systems.

As well as Kodak, an unnamed US government office is now testing the machine.

Export services handbook

TO aid existing and potential exporters of both products and services, the British Overseas Trade Board has published the Export Services Handbook guide to government and non-government facilities. The book costs £2.50 plus 30p packing and postage, and is available from the Publications Sales Unit, BOTB, Export House, 50 Ludgate Hill, London EC4M.

Digital's VAX-11/780 takes on the world's leading scientific mainframe.

And wins two rounds out of three.

Round one to the 60 bit mainframe:
Speed. The mainframe is still the speed champion with 9100 Whetstones per second.
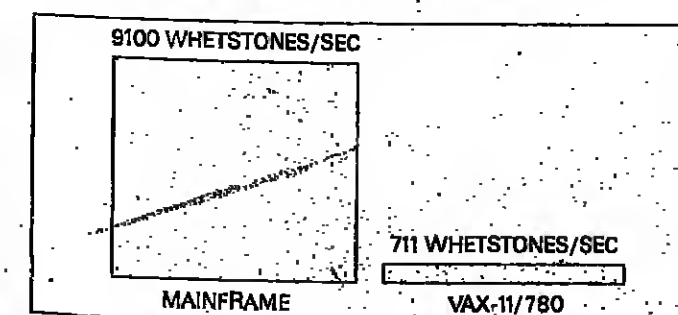
Round two to VAX: Price/Performance.
The 32 bit VAX is the world's fastest mini. A VAX system runs 711 double precision Whetstones. That's one twelfth the speed – at one twenty-fifth the cost. A dozen VAX systems could equal the throughput of the mainframe system – and you'd still save literally millions of dollars.
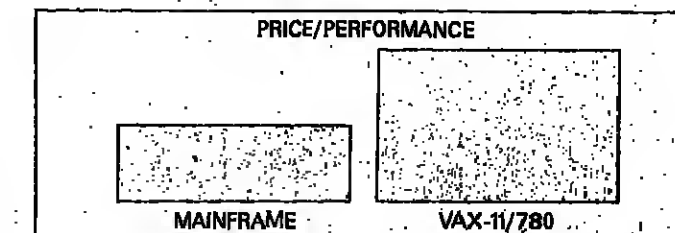
Round three to VAX: Program size.
Virtual addressing and a gigantic 32 bit address size, compared to the 18 bit address size of the mainframe, allows VAX a directly addressable program size that is – are you ready? – 1000 times larger than the mainframe.
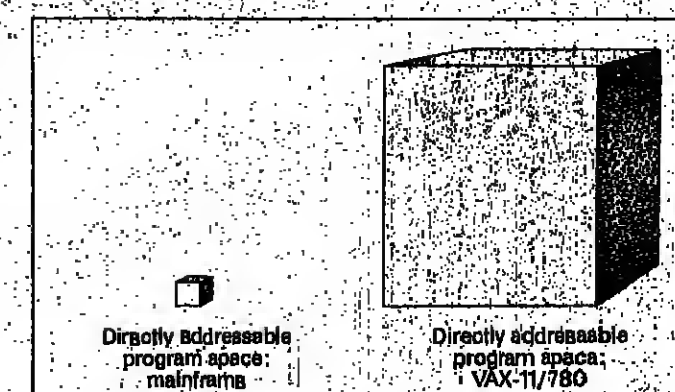
Get the VAX facts: Get mainframe FORTRAN performance without waiting in a batch queue – or paying batch prices. If you have an application in aerospace computation, signal processing, simulation, educational computing, industrial automation, or any other big FORTRAN job, get the VAX facts today. Write for your copy of the VAX-11/780 brochure and complete technical summary.

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PEOPLE

President of BEAMA for 1978/9 elected

PRESIDENT for 1978/9 of the British Electrical and Allied Manufacturers' Association, BEAMA, is Michael Perkinson, chairman and chief executive of Crompton Parkinson Ltd.

He has also been a director of Hawker Siddeley Electric since 1976 and of Hawker Siddeley Group since 1971. During 1970/71 he represented Hawker Siddeley Electric on the BEAMA Council.

Harry Jackson, a director of GEC Management, was appointed deputy president of BEAMA.

Chris Wood, who was sales and marketing director at BOC Datasolve, has been appointed managing director. Roger Wallhouse has been promoted from marketing manager to marketing director, and Cyril Banyard, previously deputy managing director, becomes deputy chairman. Doug Eyeless, previously director of external relations, assumes the title of technical director.

John Washington has been appointed to European software development manager with Modcomp, and Jim Whitfield to European technical support manager. Both were previously European technical support analysts with the company.

Denton Smith, managing director of Data Sciences International, has been appointed to the board of the parent company, the Barr and Wallace Arnold Trust, with effect from September.

Chris Crawford, a director of Pansophic Systems' UK subsidiary, has been appointed vice-president for Europe. He will be based at the European HQ in Holland.

Kenneth Dibbon has been appointed to the board of the Kalamazoo Group as a non-executive director. He left Hambros Bank, where he was a director, earlier this year to devote more time to his private business consultancy interests.

Cheryl Pink, formerly a sales representative with L'Oreal, Celia Forrest, who was an air stewardess with British Midlands Airways, and Jan Roberts, previously a sales representative with A. B. Dick, form the new team at CPU Computers, which will market the System M-One small business computer in the South-East.

Terry Carter, of Redifon Computers, previously development manager, has been appointed engineering manager. Dave Hart, who was product engineering manager for Seecheck, has become product manager, engineering at Redifon.

Ian Griffiths joins Trent Polytechnic's computing services department as systems manager from York University where he was a systems programmer.

Matt Pannell, a 20-year-old draughtsman with Dateproducts, Dublin, represented Ireland in the World Life-Saving Championships held at the Crystal Palace, London, in July. Matt has already swum for his country twice in life-saving competitions, in Ireland in 1975 against France and Australia, and in the last world championships in Berlin in 1976.

John Horan, who is chairman of the US company Merck's board of directors and its president and chief executive officer, has been appointed a director of NCR.

Eamonn Cooper has joined Insight Marketing and Personnel Consultants in Dublin as senior personnel consultant. For the last year he has been running his own restaurant, the Pot Pourri, and before that was head of organisation and methods with the Roadstone Group.

Peter White, sales manager of Alacra, has been promoted to sales director.

Washington conference

Scheduled for November 7-9 at Washington, DC's Sheraton-Park Hotel, the US Federal Computer Conference and Exposition is designed for government computer users.

Among the topics dealt with by the three-day programme will be a software conversion, privacy and security, the latest advances in products and services, and technological trends in the computer field.

AT&T, Honeywell, CSC, General Automation, Perkin-Elmer and 3M are some of the companies which will be exhibiting at the Exposition.

Details and registration forms can be obtained by writing to Federal Computer Conferences, Box 368, Wayland, Mass 01778, USA.

Michael Spanner, until recently sales manager of Geveke Electronics, has been appointed UK manager.

Eric Sutton, previously a personnel manager with Univac, has joined Hoggett Bowers Selection as a regional consultant in the London office.

Calls for papers

PAPERS are solicited for the 1979 International Symposium on Fault-Tolerant Computing, to be held in Madison, Wisconsin on June 20-23, 1979. It is sponsored by the technical committee on fault-tolerant computing of the IEEE Computer Society. The deadline for receipt of a 200-word summary is four pages is November 1, and it should be sent to the Program Chairman, Gerald M. Masson, Dept of Electrical Engineering, Johns Hopkins University, Baltimore, Maryland 21218.

A CALL for papers has been issued by the Japan Society of Applied Physics, organisers of the 1979 International Conference on Solid State Devices, which will be held at the Tokyo Chamber of Commerce and Industry on August 28-30, 1979. The deadline for summaries is March 31, 1979. Details can be obtained from: 1979 International Conference on Solid State Devices, Japan Society of Applied Physics, Kikai-Shinko Kaikan, 3-5-8, Shiba-Koen, Minato-ku, Tokyo 105, Japan.

Gasmen look at array processor

AFTER using a Univac 1106 for eight years, British Gas London Research Station needs a greater capacity and is looking for a replacement.

The LRS aims to keep abreast of techniques used in the oil industry and has looked at several array processors such as ICL's DAP. A larger Univac machine has also been considered.

Software developed at the station for analysis and prediction of gas field development, and distribution network planning was demonstrated last week, to celebrate 50 years since the laboratory came into existence on the Fulham Research Laboratory of the Gas, Light and Coke Co.

A new program called Greop is used for assessing different strategies of gas and oil extraction in the North Sea and Irish Sea gas fields.

Another program run on the 202K 1106 system uses weather reports to predict demand for gas, which can vary five per cent with a one degree Centigrade change in temperature.

The station developed its own hardware monitor, which shows that 80 to 90% CPU loading has been achieved.

The station also uses three minis as parts of analytical instruments. An X-ray fluorescence spectrometer from Link Systems, based on a Data General Nova 2, is used to identify elements present in a sample of any material. As well as pinpointing the main elements in seconds, it can detect minute traces of other elements within half an hour non-destructively.

A 32K Philips 852M controls an X-ray diffractometer for identifying crystalline compounds in a material and a Varian 311A controls a mass spectrometer and a gas chromatograph used together in further materials analysis.

Fabians fail to clear the DP mists

THE latest group to jump on the bandwagon of those expostulating on the social impact of computers is the Fabian Society, which has published a new tract entitled "The computer and society"* by Tom Crowe and John Hywel Jones, both of the Computer Science Department of Thames Polytechnic.

Sadly, the mists of confusion and ignorance surrounding this important subject are in no way cleared by this pamphlet; rather they are made worse by hysterical and muddled thinking.

Understanding of the pamphlet is inhibited at the initial level by a mass of misprints and illiteracies. Having waded through these, one is next struck by a mistake that is commonly made by lay people but is surprising coming from professionals: the anthropomorphising of computers, as if they were alien invaders who walked and talked among us.

"Man must not allow the computer ... to define its own role. Like some alien force, it has gradually digested a major part of our records. The computer needs to be brought under control."

This vision of machines taking over the world, emanating largely from Samuel Butler, has long been discredited as people have become aware that machines are only extensions of the human body.

A spade is an extension of the arm of the digger; a computer is an extension of the brain and hand of the programmer. Interestingly enough, one of the first authorities the Fabian authors rest their argument on is Samuel Butler.

The pamphlet proceeds to expound on the enormous changes that computers could wreak on our society over the next 30 years, claiming that at present these changes are outside the control of people.

The authors' agonising is accompanied by various inaccuracies and self-contradictions. For instance, they ask: "How can the national scientific tradition of socialism help us to fight these dangers," Then they quote Marcuse attacking "technological rationality" as an evil.

Several courses of action are proposed to increase control over the development of computer technology, mainly concerned with freedom of information and privacy.

One is to extend the brief of the proposed Data Protection Authority to cover "social impact" and "the dehumanising effect of the use of computers in a social context," where presumably it would have power to ban developments. How it would judge "dehumanising effect" is not specified.

The public has serious need of more sophistication about computers, to avoid being misled and to make sure it gets what it wants rather than what the experts want. Unfortunately this pamphlet makes little constructive contribution to that aim.

*The computer and society, by Tom Crowe and John Hywel Jones. 16pp. 50p. Fabian Society, 11 Dartmouth Street, London, SW1H 9BN.

RORY JOHNSTON

Insight into the costing of data processing

AN insight into how accountants cost data processing is provided in a 94 page booklet, The cost control of data processing'. It was written by a group of members of the Institute of Cost and Management Accountants but being written by accountants for accountants should not deter other readers. Indeed the sections on charging out could be very useful for the DP manager.

The book begins with the cost justification and evaluation of DP proposals. Cost control of the DP department and project development occupies a further 35 pages of useful information. The final chapters are concerned with charging out and seven methods are briefly explained.

ICMA has been running a series of courses on "Charging for Computer Services" in conjunction with the National Computing Centre.

*The cost control of data processing, £3.94, B. V. Piggott, Institute of Cost and Management Accountants, 63 Portland Place, London, W1N 4AB. Tel: 01-580 8542.

First products released

A TACTICAL communications management system, and ruggedised terminals for industrial environments are among the first products from Systems Production, a new company manufacturing mini and micro based computer systems.

The new company is associated with Systems Designers and the shares of both companies are owned by the holding company, Systems Designers International.

Housed in a new, purpose-built 7,000 square foot factory in Farnborough, Hants, the company is aiming for a turnover of £880,000 in its first year of business.

NEWS IN BRIEF

Historic poster

A DECORATIVE poster, depicting the evolution of computers as a tree with many branches, has been produced by Management Information Corp. Each branch shows a different history making machine such as the IBM 607 in the 1950s, the 7094 in the '60s, the System 360 starting in 1965 and the System 370 in the early 70s.

Copies at $15 each can be ordered from MIC at 140 Barclay Centre, Cherry Hill, New Jersey 08034.

$135,000 order

ELECTRICAL and mechanical turnkey contracting subsidiary of the Hawker Siddeley group, Hawker Siddeley Power Engineering, has purchased three Burroughs B800 systems worth £135,000.

Logabax at Oscott

REPLACING conventional cash registers, three Logabax LX4600 disc-based systems have been installed by Oscott Equipments, Birmingham-based car parts cash and carry company. Valued at £55,000, the systems will produce on-the-spot detailed invoices, handle stock control of 250,000 items as well as payroll, general accounting and labour production etc.

Online policy

ONLINE policy registration has been added to the services provided by CMG's Croydon bureau to Europ Assistance, the Croydon-based travel insurance specialists. In response to client inquiries Europ can call up details of policies via Burroughs VDUs linked to CMG's Burroughs B4700.

Redifon scores 15

THE number of Kay-to-disc systems from Redifon Computers installed with various Greater London boroughs will soon total 15 following orders placed by the London Borough of Hillingdon and the Corporation of London. The two orders are worth about £80,000.

First UK order

THE first UK order for the low-cost Digital Equipment OEM Micro 2020 mainframe (CW March 9) has been placed by Powell Duffryn Computer Services. The company will use the machine to run its online production control system.

Alternative

Daisy wheel printers can now be used on the Kalis Infotec 7000 word processor as an alternative to the IBM golf ball printer. A new model, the tri-totec 7000 G, incorporates a Qume printer and costs £4,525. Existing units can be upgraded for about £2,000. Kalis Infotec word processors are marketed in the UK by Dataword Equipment.